

## REMARKS

Claims 1-3 and 5-47 are pending in the present application. Claim 4 was previously canceled. Claims 1 and 41 have been amended. No new matter has been added. Applicant respectfully requests reconsideration of the claims in view of the following remarks.

### **I. IMPROPER FINALITY**

According to MPEP § 706.07(a):

Under present practice, second or any subsequent actions on the merits shall be final, *except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims* nor based on information submitted in an information disclosure statement filed during the period set forth in 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p). MPEP § 706.07(a) (emphasis added).

In Applicant's response, dated July 20, 2007, Applicant did not amend independent claim 32. Therefore, the new ground of rejection issued by the Examiner with respect to claim 32 was not necessitated by Applicant's amendment of the claims. Thus, as directed by MPEP § 706.07(a), the Examiner's indication of finality in the previous office action was improper.

As such, Applicant respectfully requests the Examiner to withdraw the improper finality of his rejections.

### **II. AMENDMENTS**

#### ***A. Claims***

Claim 1 was amended to recite, "manipulating the signal outside of the RF circuit; and producing a metric for the test outside of the RF circuit based on results from the manipulating." Support for this amendment can be found in original claim 32 and in the Specification, at least, at Figure 10. Thus, no new matter was added.

Claim 41 was amended to recite:

“...wherein the performance of the DCO can be ascertained by a test circuit outside of the circuit observing an output of the phase detector, wherein the test circuit manipulates the observed output and generates a performance metric for the DCO based, at least in part, on the manipulation ....”

Support for this amendment can be found in original claim 32 and in the Specification, at least, at Figure 10. Thus, no new matter was added.

### III. CLAIM REJECTION - 35 U.S.C. § 102

Claims 32-34 and 37-40 have been rejected under 35 U.S.C. § 102(b) as assertedly being anticipated by U.S. Patent No. 5,295,079 to Wong, et al. (hereinafter “Wong”).

“A claim is anticipated *only if* each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). Moreover, “[t]he *identical invention* must be shown in as complete detail as is contained in the . . . claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989) (emphasis added).

Claim 32 requires, “a processor coupled to a radio frequency (RF) circuit, the processor containing circuitry to manipulate digital signals from the RF circuit to provide a performance metric for the RF circuit.” In rejecting claim 32, the Examiner asserts that *Wong* shows the identical invention in as complete detail as shown in claim 32. However, Applicant asserts that *Wong*, in fact, does not teach or even suggest the invention as described in claim 32.

*Wong* teaches an interface, link 6, over which the digital tester 4 can configure the phase locked loop (PLL), DUT 2. The configuration is performed by circuitry within the PLL (DUT 2)

(e.g., LCP 24, FAP 26, and PAP 28), and not circuitry that is within the digital tester 4, as required by claim 32. Also, any manipulation of the PLL signal that occurs because of this configuration does not provide a “performance metric.” No where, in *Wong*, is it taught that circuitry within the digital tester 4 manipulates signals from the PLL (DUT 2) to produce a performance metric. *Wong* teaches that the digital tester 4 can extract and interpret data from the PLL, and includes means for generating a plurality of test patterns and monitoring test results. Col. 1, lns 56-61. However, this is not the same as circuitry contained in the digital tester 4 that manipulates digital signals from the PLL in order to provide a performance metric, as required by claim 32. There is no performance metric that is provided by *Wong*. In fact, the Examiner does not even point to anything in *Wong* that would correspond to such a performance metric. Thus, *Wong* does not teach or even suggest the identical invention as defined in claim 32. Accordingly, claim 32 is allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejection of claim 32 be withdrawn.

The Examiner improperly rejects claims 33-34 and 37-40 under 35 U.S.C. § 102(b) based on a **combination** of the disclosures of *Wong* and U.S. Patent No. 5,486,792 to Girardeau, Jr., (hereinafter “*Girardeau*”). Rejections under § 102(b) typically apply only to a single reference. The Examiner’s combination rejections appear to be either a mistake or more appropriately placed in his rejections under 35 U.S.C. § 103(a).

Regardless of such alleged combination, claims 33-34 and 37-40 depend from claim 32 and inherit all of the limitations of claim 32. Accordingly, claims 33-34 and 37-40 are allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejections of claims 33-34 and 37-40 likewise be withdrawn.

#### IV. CLAIM REJECTION – 35 U.S.C. § 103

In *Graham v. John Deere Co. of Kansas City*, the Supreme Court set out a framework for applying the statutory language of §103. 383 U.S. 1 (1966). The Court stated:

Under 35 U.S.C. §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. *Id.*, at 17–18.

The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. *KSR Int'l Co., v. Teleflex, Inc.*, 550 U.S. \_\_\_\_ (2007).

Patents for obvious combinations must generally be disallowed because a “patent for a combination which only unites old elements with no change in their respective functions . . . obviously withdraws what is already known into the field of its monopoly and diminishes the resources available to skillful men.” *Great Atlantic & Pacific Tea Co., v. Supermarket Equipment Corp.*, 340 U. S. 147, 152 (1950). However, when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious. *United States v. Adams*, 383 U. S. 39, 51-52 (1966).

##### *A. Claims 1, 3-8, 11, 13-17, 19-22, 24, 27-31, 41, 43, 45, and 46*

Claims 1, 3-8, 11, 13-17, 19-22, 24, 27-31, 41, 43, 45, and 46 have been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over U.S. Patent No. 5,486,792 to Girardeau, Jr. (hereinafter “*Girardeau*”) in view of U.S. Patent No. 6,687,629 to Yamaguchi, et al. (hereinafter “*Yamaguchi*”).

As admitted by the Examiner, *Girardeau* does not teach that a signal from within the processing section of the RF circuit is observed by a processor outside of the RF circuit itself. Final Office Action, p. 6. The Examiner attempts to cure this deficiency by offering *Yamaguchi*, which he alleges teaches such limitations. However, the combination of *Girardeau* and *Yamaguchi*, in fact, does not teach each and every limitation of the claimed invention.

1. Claims 1, 3-8, 11, 13-17, 19-22, 24, and 27-31

Claim 1, as amended, requires, “manipulating the signal outside of the RF circuit; and producing a metric for the test outside of the RF circuit based on results from the manipulating.” Neither *Girardeau* nor *Yamaguchi* teach or suggest manipulating the signal being observed, where the manipulating is done outside of the RF circuit. The portions of *Girardeau* that the Examiner asserts manipulate the observed signal are actually portions of the DPLL itself, and not part of the test circuit. While everything in the Specification of the present application points to the testing, manipulating, and producing of the metric occurring on the test circuit, Applicant has, nonetheless amended claims 1 and 41 to more specifically claim this limitation. Because neither *Girardeau* nor *Yamaguchi*, whether alone or in combination, teach or even suggest manipulating the observed signal off the RF circuit, the combination does not teach or suggest each and every limitation of claim 1. Accordingly, claim 1 is allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejection of claim 1 be withdrawn.

Claims 3-8, 11, 13-17, 19-22, 24, and 27-31 depend from claim 1 and inherit all of the limitations of claim 1. Accordingly, claims 3-8, 11, 13-17, 19-22, 24, and 27-31 are allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejections of claims 3-8, 11, 13-17, 19-22, 24, and 27-31 likewise be withdrawn.

## 2. Claims 41, 43, 45, and 46

Claim 41, as amended, requires:

“wherein the performance of the DCO can be ascertained by a test circuit outside of the circuit observing an output of the phase detector, wherein the test circuit manipulates the observed output and generates a performance metric for the DCO based, at least in part, on the manipulation.”

The Examiner, again, offers the combination of *Girardeau* and *Yamaguchi* to show this limitation. In particular, the Examiner alleges that this limitation is taught by *Yamaguchi*. However, *Yamaguchi* does not teach or suggest that the performance of a DCO can be ascertained by the Spectrum Analyzer observing and manipulating an output of the Phase Detector to generate a performance metric in *Yamaguchi*’s Figure 29, as required by claim 41.

First, it has been well-established that *Girardeau* does not teach observing and manipulating a signal outside of an RF circuit, as required by claim 41. While *Yamaguchi* discloses connecting a Spectrum Analyzer to a Phase Detector, it does not disclose or suggest that the observed signal is manipulated within the Spectrum Analyzer to generate a performance metric that is, at least in part, based on the manipulation. Thus, the combination of *Yamaguchi* with *Girardeau* does not teach and every limitation of claim 41.

Moreover, in making and supporting rejections, the Examiner cannot merely find a Figure in a reference and conclude that this figure can perform any desired sequence regardless of what the cited reference describes the Figure to be or describes how the figure is configured. In *Yamaguchi*, Figure 29 describes connecting the output of the PLL to be tested to the Phase Detector. Col. 15, lns 27-32. However, the PLL under test is connected as the *reference signal* to the Phase Detector. Col. 15, lns 31-32. The purpose of the Spectrum Analyzer in Figure 29 is to detect the phase noise density spectrum function of the phase difference signal from the Phase Detector, the phase noise density spectrum function corresponds to the jitter in the PLL under

test. Col. 15, lns 35-39. Thus, Figure 29 of *Yamaguchi* can, at most, can be generalized to the Spectrum Analyzer observing the output of the Phase Detector, to test the signal coming from the *reference* signal generator. In the case described and illustrated in *Yamaguchi*, that reference signal generator is the PLL under test.

In contrast, claim 41 requires the test circuit to test the performance of the DCO, which is not a component in the *reference signal* generation circuitry. The reference phase accumulator, which calculates the reference phase, is not even coupled to the DCO. Both are, instead coupled to the phase detector. Thus, the teaching of *Yamaguchi* does not teach or even suggest the same sequence or configuration as detailed in claim 41. As such, the combination of *Girardeau* and *Yamaguchi* does not teach or suggest each and every limitation of the claimed invention. Accordingly, claim 41 is allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejection of claim 41 be withdrawn.

Claims 43, 45, and 46 depend from claim 41 and inherit all of the limitations of claim 41. Accordingly, claims 41, 43, 45, and 46 are allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejections of claims 43, 45, and 46 likewise be withdrawn.

#### ***B. Claim 2***

Claim 2 has been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over *Girardeau* and *Yamaguchi* as applied to claim 1 above, and further in view of U.S. Patent No. 6,885,700 to Kim, et al. (hereinafter “*Kim*”).

Claim 2 depends from claim 1 and inherits all of the limitations of claim 1. As noted above, the combination of *Girardeau* and *Yamaguchi* does not teach or even suggest each and every limitation of claim 1. The Examiner does not offer *Kim* to cure these deficiencies, nor

does *Kim*, in fact, teach such limitations. Accordingly, claim 2 is allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejection of claim 2 likewise be withdrawn.

***C. Claims 10 and 44***

Claims 10 and 44 have been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over *Girardeau* and *Yamaguchi*, as applied to claim 1 above, and further in view of U.S. Patent No. 5,825,253 to Mathe, et al. (hereinafter “*Mathe*”).

Claims 10 and 44 depend from claims 1 and 41, respectively, and, thus, inherit all of the limitations of claims 1 and 41, respectively. As noted above, the combination of *Girardeau* and *Yamaguchi* does not teach or even suggest each and every limitation of claims 1 and 41. The Examiner does not offer *Mathe* to cure these deficiencies, nor does *Mathe*, in fact, teach such limitations. Accordingly, claims 10 and 44 are allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejections of claims 10 and 44 likewise be withdrawn.

***D. Claims 12 and 47***

Claims 12 and 47 have been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over *Girardeau* and *Yamaguchi*, as applied to claim 1 above, and further in view of U.S. Patent No. 5,768,326 to Koshiro, et al. (hereinafter “*Koshiro*”).

Claims 12 and 47 depend from claims 1 and 41, respectively, and, thus, inherit all of the limitations of claims 1 and 41, respectively. As noted above, the combination of *Girardeau* and *Yamaguchi* does not teach or even suggest each and every limitation of claims 1 and 41. The Examiner does not offer *Koshiro* to cure these deficiencies, nor does *Koshiro*, in fact, teach such limitations. Accordingly, claims 12 and 47 are allowable for at least the reasons discussed



above. Applicant, therefore, respectfully requests that the rejections of claims 12 and 47 likewise be withdrawn.

***E. Claims 18***

Claim 18 has been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over *Girardeau* and *Yamaguchi*, as applied to claim 1 above, and further in view of U.S. Patent No. 4,086,539 to Gustafson, et al. (hereinafter “*Gustafson*”).

Claim 18 depends from claim 1 and inherits all of the limitations of claim 1. As noted above, the combination of *Girardeau* and *Yamaguchi* does not teach or even suggest each and every limitation of claim 1. The Examiner does not offer *Gustafson* to cure these deficiencies, nor does *Gustafson*, in fact, teach such limitations. Accordingly, claim 18 is allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejection of claim 18 likewise be withdrawn.

***F. Claim 42***

Claim 42 has been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over *Girardeau* and *Yamaguchi*, as applied to claim 41 above, and further in view of U.S. Patent No. 7,079,611 to Knudsen (hereinafter “*Knudsen*”).

Claim 42 depends from claim 41 and inherits all of the limitations of claim 41. As noted above, the combination of *Girardeau* and *Yamaguchi* does not teach or even suggest each and every limitation of claim 41. The Examiner does not offer *Knudsen* to cure these deficiencies, nor does *Knudsen*, in fact, teach such limitations. Accordingly, claim 42 is allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejection of claim 42 likewise be withdrawn.

***G. Claims 1, 3-8, 11, 13-17, 19-22, 24, 27-31, 35, 36, 41, 43, 45, and 46***

Claims 1, 3-8, 11, 13-17, 19-22, 24, 27-31, 35, 36, 41, 43, 45, and 46 have been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over *Girardeau* in view of *Wong*.

**1. Claims 1, 3-8, 11, 13-17, 19-22, 24, 27-31, 35, and 36**

Claim 1, as amended, requires, “manipulating the signal outside of the RF circuit; and producing a metric for the test outside of the RF circuit based on results from the manipulating.” The Examiner asserts that the manipulating and producing of the metric is performed by *Girardeau* in the *Girardeau-Wong* combination. However, as noted above, *Girardeau* does not teach or suggest manipulating the signal being observed or producing a metric, where the manipulating and producing are done outside of the RF circuit. The portions of *Girardeau* that the Examiner asserts manipulate the observed signal are actually portions of the DPLL itself, and not part of the test circuit. Therefore, *Girardeau* does not teach this limitation.

Also as previously noted, *Wong* teaches an interface, link 6, over which the digital tester 4 can configure the phase locked loop (PLL), DUT 2. The actual configuration is performed by circuitry *within the* PLL (DUT 2) (e.g., LCP 24, FAP 26, and PAP 28), and not circuitry that is within the digital tester 4 (i.e., outside of the RF circuit), as required by claim 1. Also, any manipulation of the PLL signal that occurs because of this configuration does not produce a “metric” outside of the RF circuit either. In fact, nowhere in *Wong*, is it taught that the digital tester 4 manipulates signals from the PLL (DUT 2) outside of the PLL in order to produce a metric, also outside of the PLL. *Wong* teaches that the digital tester 4 can extract and interpret data from the PLL, and includes means for generating a plurality of test patterns and monitoring test results. Col. 1, lns 56-61. However, this is not the same as manipulating digital signals outside of the PLL in order to produce a metric outside of the PLL, as required by claim 1. In

fact, there is no metric that is produced by *Wong*. Thus, neither *Wong* nor *Girardeau*, whether alone or in combination, teach or suggest each and every limitation of claim 1. Accordingly, claim 1 is allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejection of claim 1 be withdrawn.

Claims 3-8, 11, 13-17, 19-22, 24, 27-31, 35, and 36 depend from claim 1 and inherit all of the limitations of claim 1. Accordingly, claims 3-8, 11, 13-17, 19-22, 24, 27-31, 35, and 36 are allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejections of claims 3-8, 11, 13-17, 19-22, 24, 27-31, 35, and 36 likewise be withdrawn.

## 2. Claims 41, 43, 45, and 46

Claim 41, as amended, requires:

“wherein the performance of the DCO can be ascertained by a test circuit outside of the circuit observing an output of the phase detector, wherein the test circuit manipulates the observed output and generates a performance metric for the DCO based, at least in part, on the manipulation”

As noted above, neither *Girardeau* nor *Wong*, whether alone or in combination, teach or suggest observing or manipulating the output of a phase detector in a test circuit outside of the circuit under test. Therefore, the combination of *Girardeau* and *Wong* does not teach or suggest each and every limitation of claim 41. Accordingly, claim 41 is allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejection of claim 41 be withdrawn.

Claims 43, 45, and 46 depend from claim 41 and inherit all of the limitations of claim 41. Accordingly, claims 41, 43, 45, and 46 are allowable for at least the reasons discussed above.

Applicant, therefore, respectfully requests that the rejections of claims 43, 45, and 46 likewise be withdrawn.

#### ***H. Claim 2***

Claim 2 has been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over *Girardeau* and *Wong*, as applied to claim 1 above, and further in view of *Kim*.

Claim 2 depends from claim 1 and inherits all of the limitations of claim 1. As noted above, the combination of *Girardeau* and *Wong* does not teach or even suggest each and every limitation of claim 1. The Examiner does not offer *Kim* to cure these deficiencies, nor does *Kim*, in fact, teach such limitations. Accordingly, claim 2 is allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejection of claim 2 likewise be withdrawn.

#### ***I. Claims 10 and 44***

Claims 10 and 44 have been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over *Girardeau* and *Wong*, as applied to claim 1 above, and further in view of *Mathe*.

Claims 10 and 44 depend from claims 1 and 41, respectively, and, thus, inherit all of the limitations of claims 1 and 41, respectively. As noted above, the combination of *Girardeau* and *Wong* does not teach or even suggest each and every limitation of claims 1 and 41. The Examiner does not offer *Mathe* to cure these deficiencies, nor does *Mathe*, in fact, teach such limitations. Accordingly, claims 10 and 44 are allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejections of claims 10 and 44 likewise be withdrawn.

***J. Claims 12 and 47***

Claims 12 and 47 have been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over *Girardeau* and *Wong*, as applied to claim 1 above, and further in view of *Koshiro*.

Claims 12 and 47 depend from claims 1 and 41, respectively, and, thus, inherit all of the limitations of claims 1 and 41, respectively. As noted above, the combination of *Girardeau* and *Wong* does not teach or even suggest each and every limitation of claims 1 and 41. The Examiner does not offer *Koshiro* to cure these deficiencies, nor does *Koshiro*, in fact, teach such limitations. Accordingly, claims 12 and 47 are allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejections of claims 12 and 47 likewise be withdrawn.

***K. Claims 18, 25, and 26***

Claims 18, 25, and 26 have been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over *Girardeau* and *Wong*, as applied to claim 1 above, and further in view of *Gustafson*.

Claims 18, 25, and 26 depend from claim 1 and inherit all of the limitations of claim 1. As noted above, the combination of *Girardeau* and *Wong* does not teach or even suggest each and every limitation of claim 1. The Examiner does not offer *Gustafson* to cure these deficiencies, nor does *Gustafson*, in fact, teach such limitations. Accordingly, claims 18, 25, and 26 are allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejections of claims 18, 25, and 26 likewise be withdrawn.

***L. Claim 42***

Claim 42 has been rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over *Girardeau* and *Wong*, as applied to claim 1 above, and further in view of *Knudsen*.

Claim 42 depends from claim 41 and inherits all of the limitations of claim 41. As noted above, the combination of *Girardeau* and *Wong* does not teach or even suggest each and every limitation of claim 41. The Examiner does not offer *Knudsen* to cure these deficiencies, nor does *Knudsen*, in fact, teach such limitations. Accordingly, claim 42 is allowable for at least the reasons discussed above. Applicant, therefore, respectfully requests that the rejection of claim 42 likewise be withdrawn.

Applicant has made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Ron Neerings , Applicant's attorney, at 972-917-5299 so that such issues may be resolved as expeditiously as possible. No fee is believed due in connection with this filing. However, should one be deemed due, the Commissioner is hereby authorized to charge, or credit any overpayment, Deposit Account No. 20-0668.

Respectfully submitted,

11/8/07  
Date

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